IN THE CLAIMS

1. (Currently amended) A gypsum panel comprising:

a gypsum core having a planar first face and a second face;

a fibrous facing material adhered at ~~feast~~ least to the first face by gypsum in the gypsum core at least partially penetrating into the fibrous facing material;

a high energy radiation cured coating of a radiation curable formulation on the fibrous facing material, wherein the radiation curable formulation is essentially free of water, and comprises

at least one high energy radiation curable polymer having ethylenically unsaturated double bonds, and

at least one high energy radiation curable reactive diluent; and

an aggregate material on and/or in the high energy radiation cured coating.

2. (Canceled).

3. (Canceled).

4. (Canceled).

5. (Canceled).

6. (Canceled).

7. (Currently amended) The gypsum panel of claim ~~3, 4, 5 or 6~~27 wherein the fibrous facing material has a dried coating of an aqueous mixture of a filler and a binder.

8. (Previously Presented) The gypsum panel of claim 1, wherein the gypsum core includes a water-resistant additive in an amount sufficient to improve the water-resistant properties of the core.

9. (Currently amended) ~~he~~ The gypsum panel of claim 8, wherein the water-resistant additive comprises at least one of a wax emulsion, an organopolysiloxane and a siliconate.

10. (Previously Presented) The gypsum panel of claim 9, wherein the core is essentially void of starch.

11. (Canceled)

12. (Previously Presented) The gypsum panel of claim 1 wherein the aggregate material is selected from ceramic microspheres, glass microspheres, calcium carbonate, sand, aluminum oxide, crushed stone, glass fibers, gypsum and perlite.

13. (Previously Presented) The gypsum panel of claim 1 wherein

the gypsum core includes at one of a wax emulsion, an organopolysiloxane and a siliconate in an amount sufficient to improve the water-resistant properties of the core;

the gypsum core is essentially void of starch and

the fibrous facing material comprises glass fibers.

14. (Withdrawn, Currently amended) A method of making the gypsum panel of claim 1 comprising sandwiching a gypsum slurry between two moving sheets of facing material, one of said sheets comprising a fibrous facing material, curing and drying the gypsum slurry to form a set gypsum panel, applying a coating of radiation curable formulation that is essentially free of water, and comprising at least one high energy radiation curable polymer having ethylenically unsaturated double bonds and at least one high energy radiation curable reactive diluent onto the fibrous facing of the set gypsum panel mat, applying a surface coating of an aggregate material onto the coating of the radiation curable formulation and curing the coating of the radiation curable formulation with high energy radiation.

15. (Withdrawn) The method of claim 14 wherein the aggregate material is selected from ceramic microspheres, glass microspheres, calcium carbonate, sand, aluminum oxide, crushed stones, glass fibers, gypsum and perlite.

16. (Currently amended) A gypsum panel comprising:

a gypsum core having a planar first face and a planar second face;

a fibrous facing material adhered at least to the first face;

a radiation cured coating of a radiation curable formulation on the fibrous facing material, wherein the radiation curable formulation is essentially free of water, and comprises

at least one high energy radiation curable polymer having ethylenically unsaturated double bonds; and

at least one high energy radiation curable reactive diluent.

17. (Previously Presented) The panel of 16, wherein an aggregate material is included in the radiation curable formulation.

18. (Previously Presented) The gypsum of Claim 16, further comprising an aggregate material on the high energy radiation cured coating.

19. (Canceled)

20. (Previously Presented) The gypsum panel of claim 1, wherein the radiation curable formulation comprises a photoinitiator present in an amount from 0.05 to 20 weight percent based on a total weight of polymerizable components in the radiation curable formulation.

21. (Currently amended) The gypsum panel of claim 16, wherein the radiation curable formulation comprises a photoinitiator present in an amount from 0.05 to 20 weight percent based on a total weight of polymerizable components in the radiation curable formulation.

22. (Previously Presented) The gypsum panel of claim 1, wherein the at least one high energy radiation curable reactive diluent is a compound that have at least one ethylenically unsaturated double bond and/or one epoxy group and have a molecular weight of less than about 800.

23. (Canceled).

24. (Previously Presented) The gypsum panel of claim 1, wherein the at least one high energy radiation curable reactive diluent is present in an amount of about 20 to 60 weight percent based on the total amount of the at least one high energy radiation curable polymer and the at least one high energy radiation curable reactive diluent in the radiation curable formulation.

25. (Previously Presented) The gypsum panel of claim 1, wherein the at least one high energy radiation curable polymer having ethylenically unsaturated double bonds is urethane acrylate oligomer or epoxy acrylate oligomer and the at least one high energy radiation curable reactive diluent is hexanediol diacrylate.

26. (Previously Presented) The gypsum panel of claim 1, wherein the at least one high energy radiation curable polymer having ethylenically unsaturated double bonds is present in the radiation curable formulation in an amount of about 20 to 99 weight percent based on a total weight of the radiation curable formulation.

27. (New) The gypsum panel of claim 1, wherein the fibrous facing material is selected from the group consisting of a multi-ply paper facing material, a non-woven mat of mineral fibers, a single-ply glass fiber mat facing material, a woven or non-woven mat of synthetic fibers, and a blend of mineral fibers and synthetic fibers.